KNUNYANTS, I. L.

USSR/ Chemistry - Conversions

Card 1/2 Pub. 40 - 9/27

Authors : Knunyants, I. L., and Lin'kova, M. G.

Title : Conversions of mercaptoamino acids. Part 2. Acylation and alkylation of dimethylcysteine

Periodical : Izv. AN SSSR, Otd. Khim. nauk 1, 62-70, Jan-Feb 1955

Abstract : Experimental data are presented showing that dimethylcysteine acylates easily with acid anhydrides and acid chlorides resulting in the formation of only N-acyl derivatives. The aqueous-alkaline dimethylcysteine solutions alkylate easily, especially with halide substituted acids, forming only S-alkyl derivatives.

Institution : Acad. of Sc., USSR, The N. D. Zelinskiy Inst. of Org. Chem.

Submitted : April 9, 1954

Card 2/2 Pub. 40 - 9/27

Periodical : Izv. AN SSSR, Otd. khim. nauk 1, 62-70, Jan-Feb 1955

Abstract : When combined with acid chlorides of beta-halide substituted carboxylic acids dimethylcysteine produces derivatives of 1-thio-5-azocycloheptanone-4. The products obtained through S-alkylation of dimethylcysteine with alpha-bromocarboxylic acids are described. Three USA references (1905-1949).

KNUNYANTS, I. L.

USSR/ Chemistry - Conversions

Card 1/1 Pub. 40 - 10/27

Authors : Knunyants, I. L.; Kil'disheva, O. V.; and Lin'kova, M. G.

Title : Conversions of mercaptoamino acids. Part 3. Acylation and alkylation of dimethylcysteine

Periodical : Izv. AN SSSR. Otd. khim. nauk 1, 71-77, Jan-Feb 1955

Abstract : The derivation of various N-acrylic derivatives of dimethylcysteine containing Br, Cl and methoxyl in the acyl radical is described. It is shown that the above mentioned derivatives cyclate as a result of the intramolecular attachment of the mercapto group of dimethylcysteine in place of the multiple bond of the crylic radical forming 1-thia-5-aza-cyclo-heptanone -3. The results obtained from the reaction of dimethylcysteine with unsaturated acids and their derivatives, are explained. One USSR reference (1955).

Institution : Acad. of Sc., USSR, The N. D. Zelinskiy Inst. of Org. Chem.

Submitted : April 9, 1954

KNUNYANTS, I.L.

USSR/ Chemistry - Biochemistry

Card 1/1 Pub. 40 - 10/26

Authors : Kil'disheva, O. V.; Rastorgueva, L. P.; and Knunyants, I. L.

Title : Conversions of mercaptoamino acids. Part 4. Alpha, beta-dihalogeno-alpha-acyl aminopropionic acids

Periodical : Izv. AN SSSR, Otd. khim. nauk 2, 260 - 270, Mar-Apr 1955

Abstract : A study of the halogenation reaction of alpha-acylaminoacrylic acids showed that they combine easily with Cl and Br forming sufficient quantities of alpha, beta-dihalogeno-alpha-acylamin[illegible] acids. The most favorable conditions for the halogenation were [illegible] temperature, with additions of Cl or Br solutions in dry chloroform or carbon tetrachloride media. Alpha, beta-dihalogeno-alpha-acylaminopropionic acids are found insoluble in HCl, but well soluble in ether. Thirty references (20 A, [illegible] Swiss and 2 English (1930-1954). Tables.

Institution : Acad. of Sc., USSR, The N. D. Zelinskiy Inst. of Organ. Chem.

Submitted : April 9, 1954

KNUNYANTS, I.L.

USSR/ Chemistry - Biochemistry

Card : - 12/[illegible]

Authors : [illegible]

Periodical : [illegible]

Abstract : [illegible] established experimentally that [illegible] is easily [illegible] presence of [illegible] methylanthranilates. The [illegible] from the reaction of [illegible] is described. One USSR reference [illegible]. Table.

Institution : Acad. of Sc., USSR, The N. D. Zelinski Inst. of Organ. Chem.

Submitted : April 9, 1954

KNUNYANTS, I. L.

USSR/ Chemistry - Biochemistry

Card [illegible] Pub. 40 - 12/26

Authors : Kil'disheva, O. V.; Lin'kova, M. G.; and Knunyants, I. L.

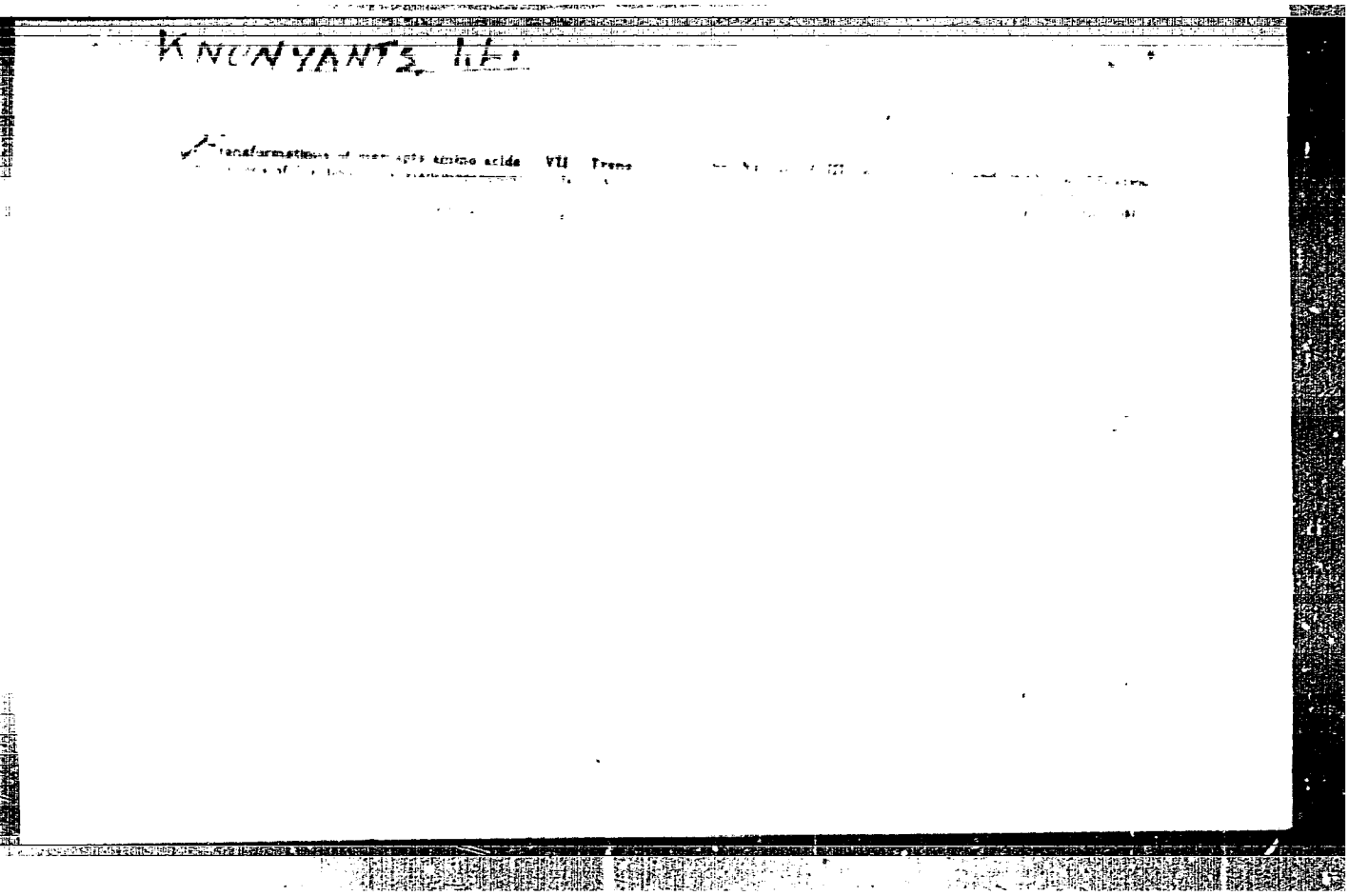
Title : [illegible] of mercaptoamino acids. Part [illegible]. Beta-halogen-alpha-acylamino [illegible] acids and their derivatives

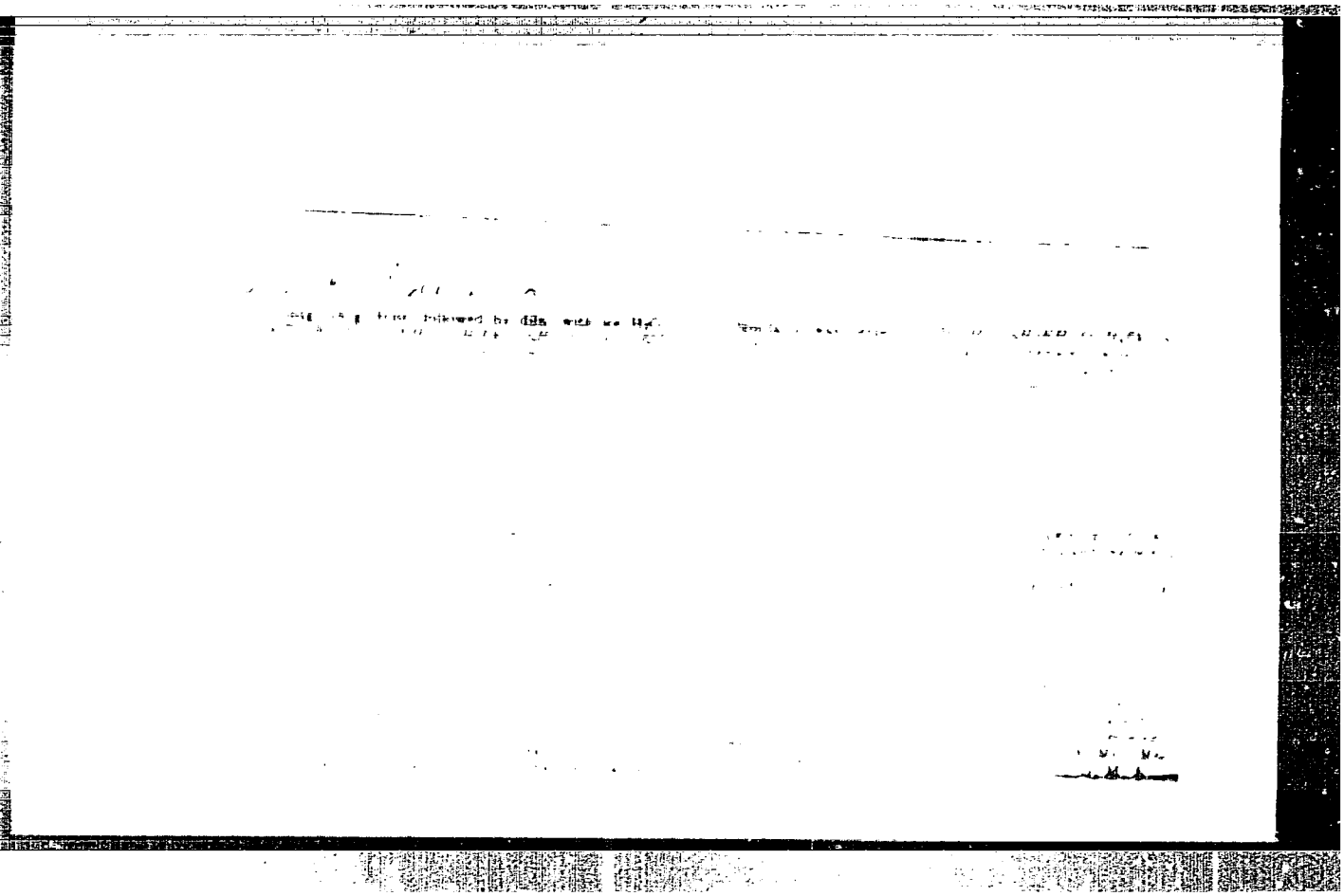
Periodical : Izv. AN SSSR. Otd. khim. nauk 2, 282 - 286, Mar-Apr 1955

Abstract : It is shown that thermal cleavage of hydrogen halide from alpha, beta-dihalo- [illegible] -alpha-acylaminopropionic acid results in the formation of beta-halogeno- [illegible] alpha-acylaminoacrylic acid. The [illegible] from the reaction of the [illegible] acid with acetic anhydride is [illegible]. The [illegible] of the first [illegible] of unsaturated internal [illegible] acid - internal anhydride of alpha-carboxyamino-beta-[illegible] the reaction of beta-bromo-alpha-carboxy[illegible] is discussed. Six references [illegible] Tables.

Institution : [illegible] of Sc., USSR, The N. D. Zelinsk[illegible]

Submitted : April 9, 1954





APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000723330001-2"

KRUNYANTS, I.L.; SHOKINA, V.V.

Conversions of mercapto amino acids. Report no.8. Alkylation and acylation of cysteine and dimethylcysteine with derivatives of α-acylamino- β-halogenopropionic acids. Izv.AN SSSR. Otd. khim.nauk no.3:462-471 My-Je '55. (MLRA 8:9)

1. Institut organicheskoy khimii im. N.D.Zelinskogo Akademii nauk SSSR.

(Cysteine) (Propionic acid)

KHUDYANTS, I.L.; PIL'SKAYA, V.Ya.

New method for the preparation of primary and secondary arsenic organic compounds. Izv.AN SSSR. Otd.khim.nauk. no.3:472-479 My-Je '55. (MLRA 8:9)

(Arsenic organic compounds)

KNUNYANTS, I. L.

LIN'KOVA, M.G.; KIL'DISHEVA, O.V.; KNUNYANTS, I.L.

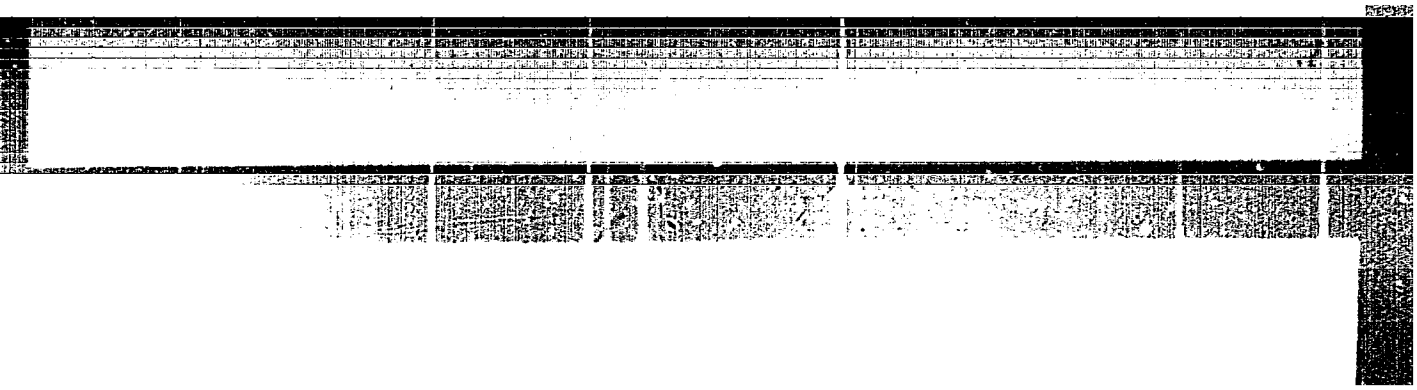
β-thiolactones. Izv.AN SSSR. Otd.khim.nauk no.3:569-570 My-Je '55. (MLRA 8:9)

1. Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Thiolactones)

KHUSAINOVA, I.L.; KIL'DISHEVA, O.V.; PERVOVA, Ye.Ya.

Conversion of mercaptoamino acids. Report no.10. New method for the synthesis of polypeptides. Izv.AN SSSR.Otd.khim.nauk no.4: 696-704 Jl-Ag '55. (MLRA 9:1)

1. Institut organicheskoy khimii imeni N.D.Zelinskogo Akademii nauk SSSR.
(Peptides) (Amino acids)



APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000723330001-2"

KNUNYANTS, I.L.

AID P - 3159

Subject : USSR/Chemistry

Card 1/1 Pub. 119 - 1/7

Authors : Knunyants, I. L. and Ye. Ya. Pervova (Moscow)

Title : Progress in establishing the structure of proteins and their synthesis

Periodical : Usp. khim., 24, 6, 641-672, 1955

Abstract : Methods of protecting the amino group during acylation as well as for the prevention of condensation are reviewed. Synthesis of numerous polypeptides is described. Several protecting agents are mentioned. The review is based on non-Russian literature exclusively.

Institution: None

Submitted : No date

SHOKINA, V.V.; KNUNYANTS, I.L.

Aldehydic acid halydes. Zhur.ob.khim. 25 no.4:758-760 Ap '55. (MIRA 8:7)

1. Institut organicheskoy khimii Akademii Nauk SSSR.
(Aldehydic acids) (Halides)

KNUNYANTS, I. L.

CH

Preparation of serine. I. L. Knunyants and V. V. Shchekin [illegible] (Inst. Org. Chem., [illegible], Moscow). Zhur. Obshchei Khim. 25, [illegible] [illegible] acid with HBr was added [illegible] g. [illegible] CO_2H; after 1 hr. the soln. was [illegible] and the [illegible] was kept overnight and [illegible] [illegible] $CH_3CONHCH(CO_2H)CH_2Br$ (I), [illegible] 161° (from [illegible]); heating with H_2O cleaves HBr, the same occurring with Na_2CO_3, $AgNO_3$, or pyridine in the cold. Into 2 g. Bz-$NHC(CH_2)CO_2H$ suspended in 4 ml. AcOH was passed dry HBr (2.4 g.) and the soln. after [illegible] gave 66% $BzNHCH(CH_2Br)CO_2H$ (II) [illegible] (from [illegible]). I (50 g.), 300 ml. H_2O, and [illegible] HBr were refluxed 3 hrs., cooled, filtered from [illegible] the filtrate being extd. with Et_2O, and the aq. [illegible] taken up in 80% EtOH chilled [illegible] with [illegible] yielding [illegible] 85% serine [illegible] [illegible] in the cold. II [illegible] [illegible]

Engl. translation, [illegible]

(1)

KHUNYANTS, I.L., akademik; YOKIN, A.V.

Fluorine and its compounds. Priroda 44 no.8:3-19 Ag '55.
(Fluorine) (MLRA 8:10)

SIMONS,J.H., editor; [redacted] akademik, redaktor; VARSHAVSKIY, Ya.M., kandidat khimicheskikh nauk, redaktor; ZAKHAR'YEVSKIY, V.A., redaktor; GRIBOVA, M.P., tekhnicheskiy redaktor

[Fluorine chemistry. Translated from the English] Ftor i ego soedineniia. Perevod s angliiskogo. Pod red. I.L.Knuniantsa i IA.M.Varshavskogo. Moskva, Izd-vo inostrannoi lit-ry, Vol.2. 1956. 495 p. (MLRA 9:11)
(Fluorine)

RODIONOV, V.M., akademik, redaktor [deceased]; KAZANSKIY, B.A., akademik, redaktor; [redacted], akademik, redaktor; SHEMYAKIN, M.M., redaktor; [redacted], professor, redaktor; ZAYTS, S.Z., redaktor; SHEMASTINA, Ye.V., redaktor; KORENEVA, V.I., tekhnicheskiy redaktor

[Reactions and methods of analysis of organic compounds] Reaktsii i metody issledovaniia organicheskikh soedinenii. Moskva, Gos. nauchno-tekhn. izd-vo khim. lit-ry. Vol.4. 1956. 319 p. (MLRA 9:7)

1. Chlen-korrespondent AN SSSR (for Shemyakin)
(Chemical reactions) (Isomers and isomerization)

Card 1/1 - 115 -

KHUNYANTS, I.L.; PERVOVA, Ye.Ya.; TYUKHOVA,V.V.

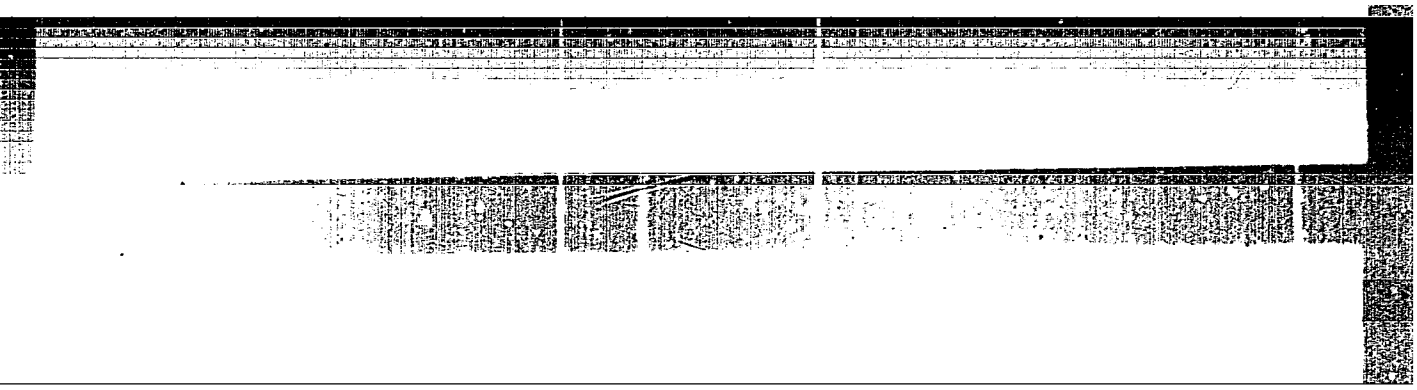
Reactions of perfluoro olefins. Part 5. Reactions for the conjugate addition of halides. Izv.AN SSSR Otd.khim.nauk no.7:843-849 Jl '56. (MLRA 9:10)

1.Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR.
(Olefins) (Halides)

Inst Org. Chem.

Abs Jour: Ref Zhur-Khimiya No 6, 1957, 19069

dimethylacrylic acid, are treated with a solution of 7.1 g. Cl_2 in 71 cc CCl_4 I is obtained, yield 93%, melting point 104° (decomp.). 7.5 g. I are treated with 30 cc of water, after 2 hours the precipitate is filtered off, yield II 73%, m. p. 70-75° (dec.) A mixture of 5.8 g. I, 50 cc $(CH_3CO)_2O$, and 25cc CCl_4 is heated in a vacuum at 70-80°] IV is obtained, yield 65%, m.p. 95° (from absolute ep). Analogically, at the treatment of 2.4 g. II with 25cc $(CH_3CO)_2O$ in CCl_4, IV is obtained, yield 40%. At the action of III on I in C_6H_6 the yield of IV is 29%. From the filtrate after treatment with bicarbonate II, m.p. 155° precipitates. 0.01 mole I heated for 2 hours with 0.01 mole PCl_5 in 20 cc abs. C_6H_6 is produced 2-phenyl-4-(2-chloro-isopropyl)-oxazolone (VI), yield 72%, m.p. 60-64° (decomp., from petr. ether). 0.01 mole I is treated with a solution



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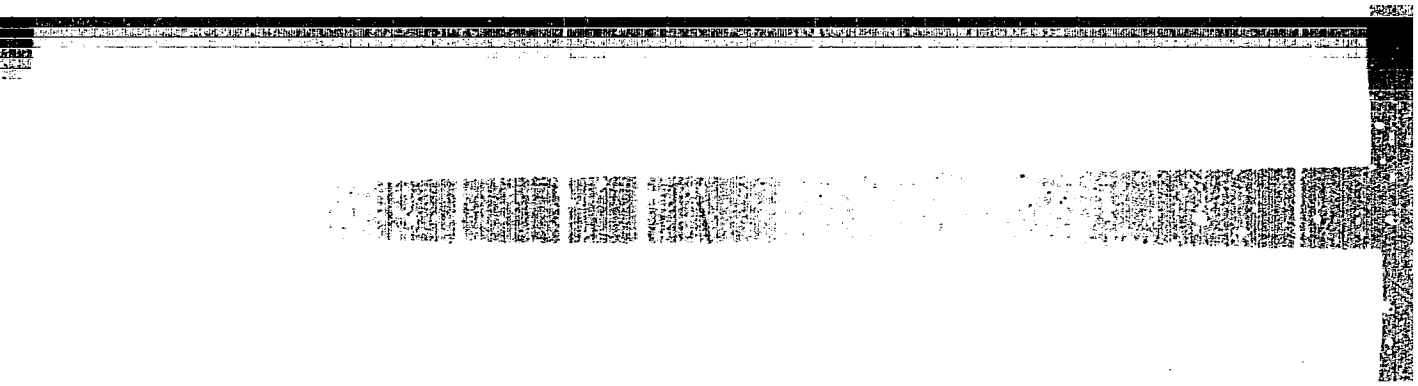

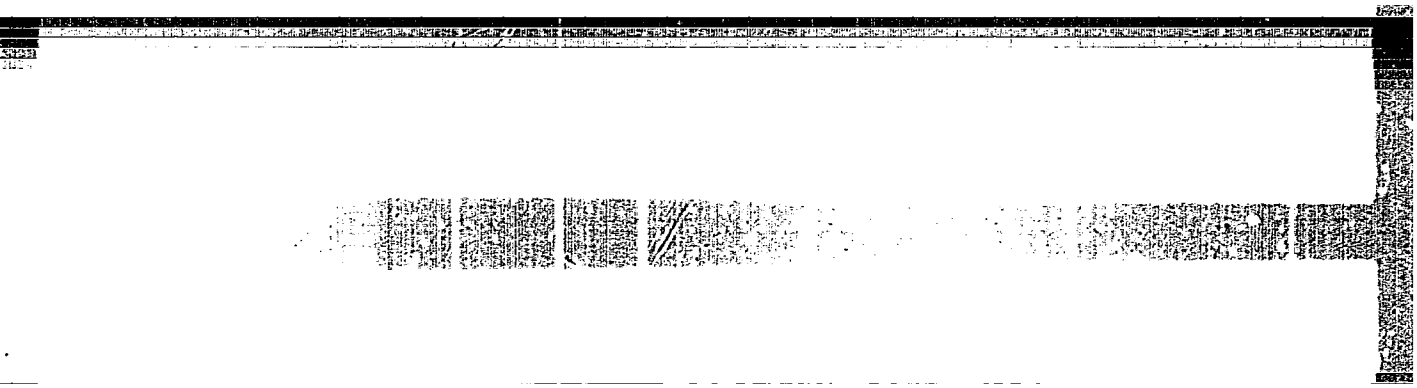

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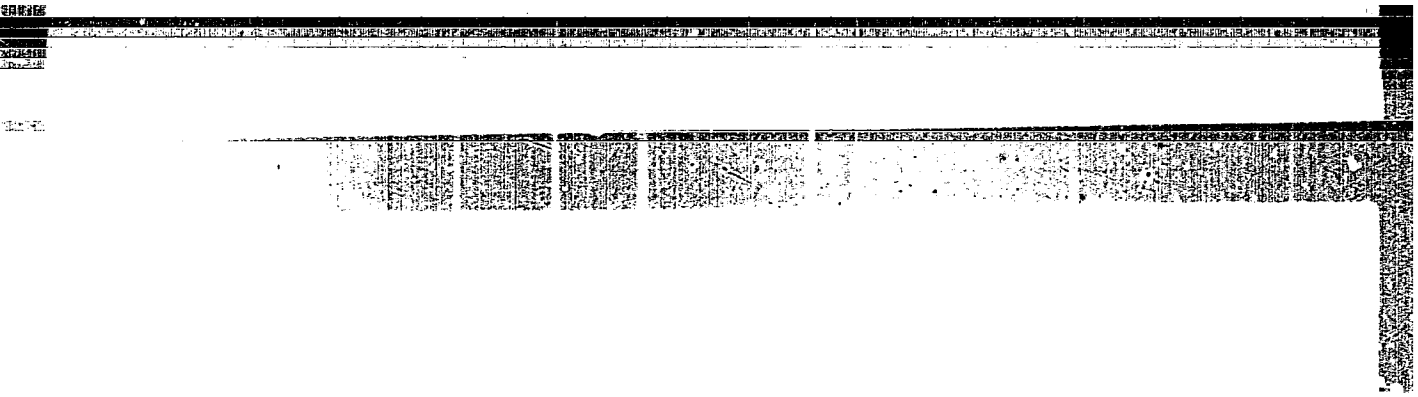

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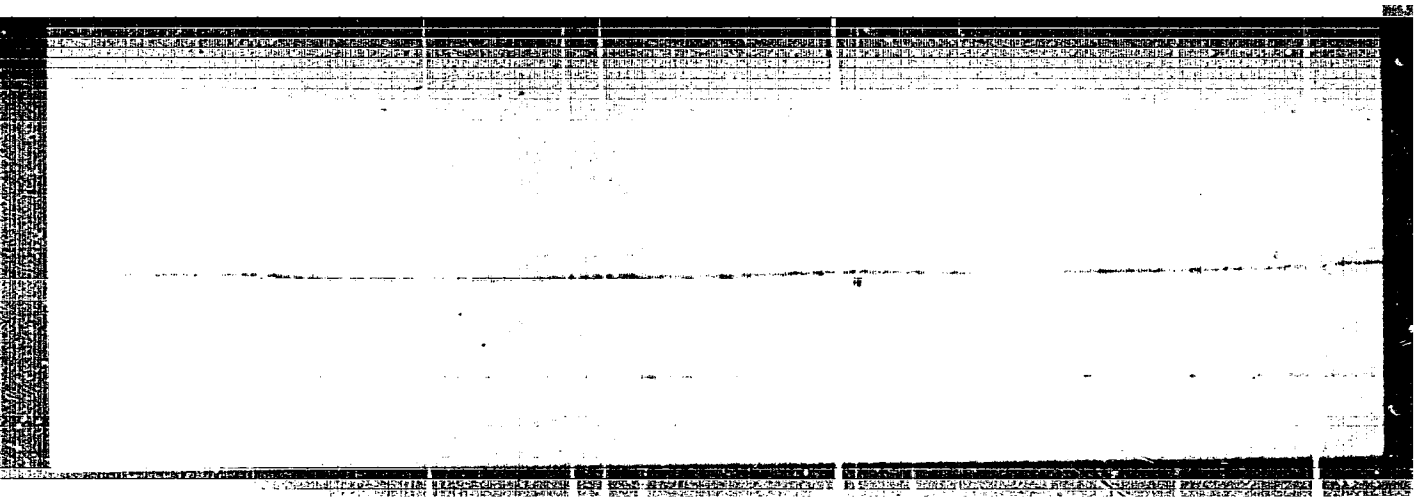


APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000723330001-2"

Knunyants, I.L.

USSR/Organic Chemistry - Theoretical and General Questions on Organic Chemistry E-1

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 4210

Author : Knunyants, I.L., Dyatkin, B.L., Gambaryan, N.P.
Title : On Ready and Widespread Formation of Four-Membered Ring

Orig Pub : Uspekhi khimii, 1956, 25, No 7, 785-844

Abstract : A synopsis of numerous literature data concerning the preparation and the stability of four-membered cyclic compounds. It is shown that ready formation and stability of four-membered rings are substantially affected by the presence of substituents and their nature. In a number of cases formation of four-membered rings takes place in preference to that of the five- and six-membered cyclic systems.
Bibliography 414 references.

Card 1/1

- 1 -

Knunyants, I. L.

NESMEYANOV, A.N.; KNUNYANTS, I.L.; SHEMYAKIN, M.M.; BOGOSLOVSKIY, B.M.; SKURATOV, S.M.; ZORKIN, A.A.; DERKEVITSKAYA, V.A.; ROGOVIN, Z.

In memory of A.A. Strepikheev; obituary. Zhur.ob.khim.26 no.11:3224-3226 N '56. (MLRA 10:1)
(Strepikheev, Aleksandr Aleksandrovich, 1912-1955)

KNUNYANTS, I.L.

USSR/Organic Chemistry. Synthetic Organic Chemistry. C-2

Abs Jour: Referat Zhur-Khimiya, No 4, 1958, 11392.

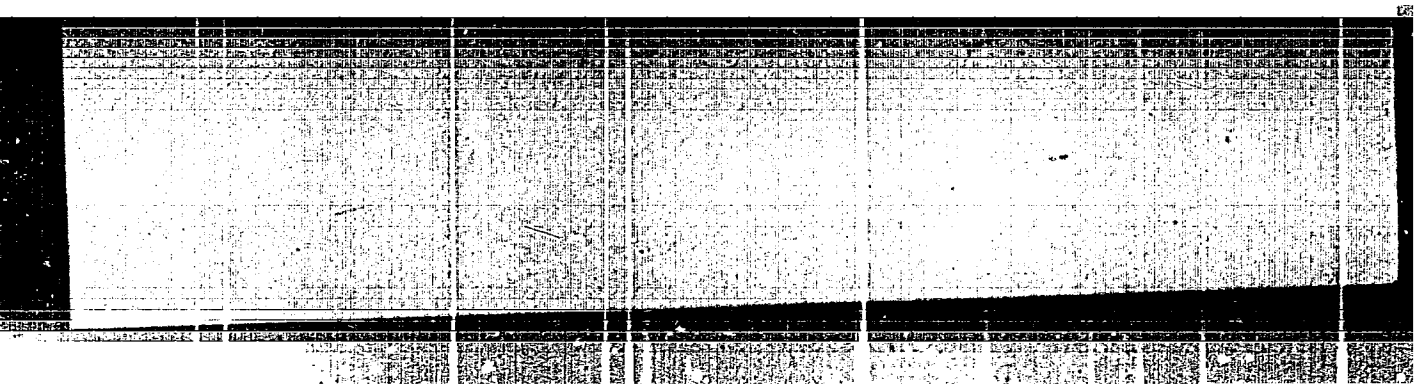
Author : Knunyants, I.L. and Fokin, A. V.
Inst : Academy of Sciences USSR
Title : The Nitration of Perfluoroolefins by Nitrogen Dioxide

Orig Pub: Doklady Akad Nauk SSSR, 111, No 5, 1035-1038 (1956)

Abstract: The reaction of N_2O_4 with perfluoroolefins proceeds by a free radical mechanism and leads to the formation of dinitroperfluoroalkanes and β-nitroperfluoroalkylnitrites; the overall yield is 90%. The reactivity of the perfluoroolefins decreases from left to right in the following series $CF_2=CF_2$ (I) > $CF_3CF=CF_2$ (II) > $CF_2CF=CFCF_3$ (III) > $(CF_3)_2C=CF_2$ (IV). I in CCl_4, $CHCl_3$, CCl_2F_2, or $CClF_2CClF_2$ at 20° (in the absence of a solvent the reaction proceeds explosively)

Card : 1/3

49



APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000723330001-2"

KHONYAMTS, I., AS USSR, Moscow
Orgn. L.

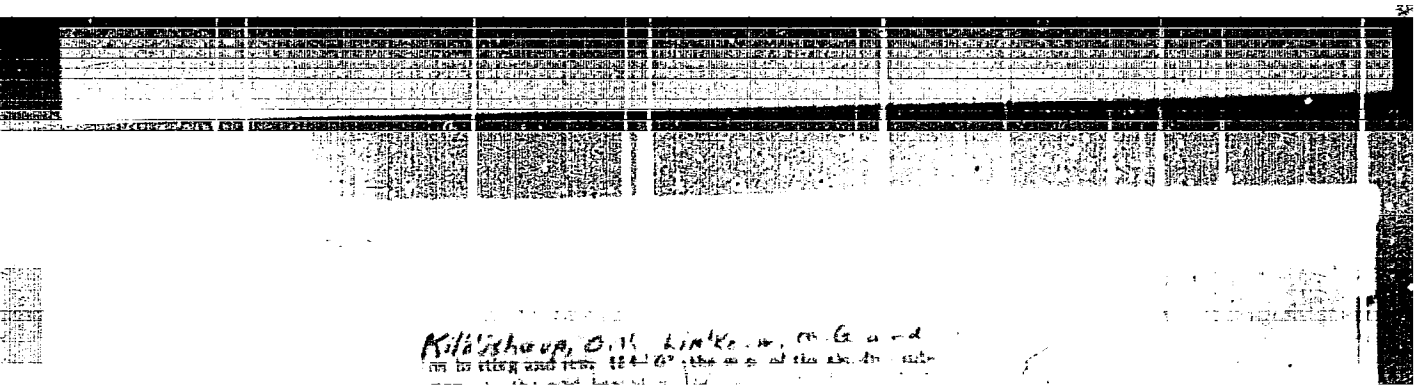
"The Structure of Non-Saturated Oxazoles, (Oxalozones)," a paper submitted at the 16th International Congress of Pure and Applied Chemistry, Paris, 18-24 July 1957.

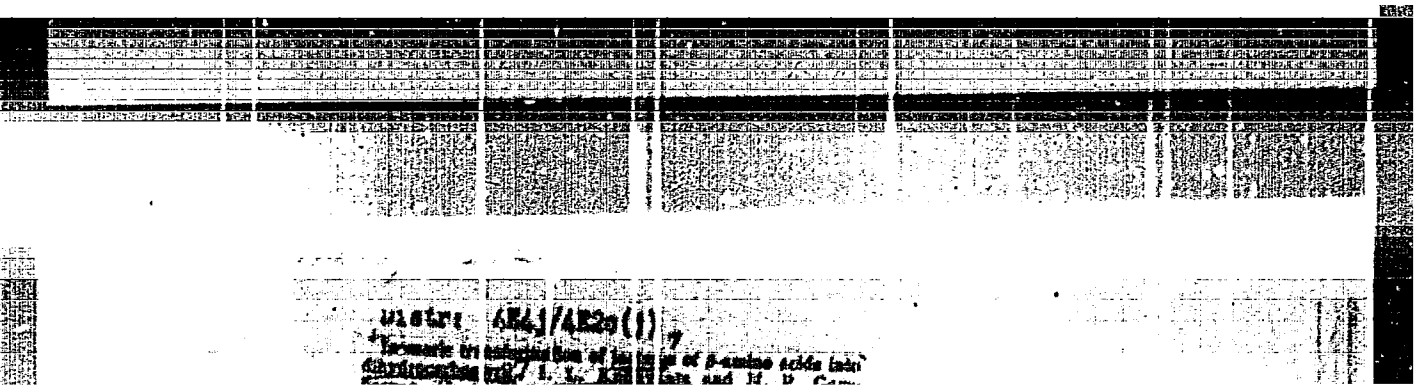
KHMYANTS, I. L.

TERENT'YEV, A.P.; YANOVSKAYA, L.A.; RUKHADZE, Ye.G., redaktor; RODIONOV, V.M., akademik, redaktor [deceased]; KAZANSKIY, B.A., akademik, redaktor; KHMYANTS, I.L., akademik, redaktor; SHEMYAKIN, M.M., redaktor; MEL'NIKOV, N.N., prof, redaktor; LUR'YE, M.S., tekhnicheskiy redaktor.

[Polarographic analysis in organic chemistry] Poliarograficheskii method v organicheskoi khimii. Moskva, Gos. nauchno - tekhn. izd-vo khim. lit-ry, 1957. 388 p. (Reaktsii i metody issledovaniia organicheskikh soedinenii, vol.5) (MIRA 10:10)

1.Chlen-korrespondent AN SSSR (for Shemyakin).
(Polarography) (Chemistry, Organic)





KNUYANTS, L.L.

USSR / General Topics. Methodology, History, Scientific Institutions and Conferences, Instruction, Bibliography and Scientific Documentation. A-1

Abs Jour : Ref Zhur - Khimiya, No 5, 1958, No 13410

Author : L.L. Knuyants

Inst : Not given

Title : Basic Development Trends of Soviet Science of Chemistry

Orig Pub : Khim. nauka i prom-st', 1957, 2, No 5, 538 - 569

Abstract : To the 40th Anniversary of the Great October socialist revolution. A review of basic divisions of chemistry in 40 years.

Card : 1/1

KHUNYANTS, I.L.

KHUNYANTS, I.L.; SOKOL'SKIY, T.A.

Electrochemical fluorination. Reakts.org.sond. 6:343-387 '57.
(MIRA 10:12)

(Electrochemistry) (Fluorination)

KHUNYANTS, I. L.

KIL'DISHEVA, O.V.; LIN'KOVA, M.G.; KHUNYANTS, I.L.

Structure and properties of oxasolones. Izv. AN SSSR Otd. khim. nauk no.6:719-729 Je '57. (MIRA 10:11)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Oxasolone)

AUTHORS: Knunyants, I.L., Fokin, A.V. 62-12-3/20

TITLE: Nitration of Fluorine Olefines by Nitrogen Dioxyde (Nitrovaniye ftorolefinov dvuokis'yu azota). Lecture Delivered at the Meeting of the Department of Chemical Sciences AN USSR on October 30, 1957 (Doklad na sessii Otdeleniya khimicheskikh nauk Akademii nauk SSSR 30 oktyabrya 1957 g).

PERIODICAL: Izvestiya AN SSSR Otdeleniye Khimicheskikh Nauk, 1957, Nr 12, pp. 1439-1451 (USSR)

ABSTRACT: The reactions of the nitration of saturated and unsaturated hydrocarbons, which have already been thoroughly investigated, were practically not investigated at all in fluorine-organic compounds. The majority of the reaction of fluorine olefines with "nucleophylic" reagents has ionic character. In contrast to the smooth interaction of perfluorine-olefines with nucleophylic reagents, their interaction with electrophylic substances takes place under much more difficult conditions. According to Koffman (1949) and Khastsel'din (1953) only dinitroalkanes are formed by the interaction of tetrafluorine ethylene and chlorine trifluorineethylene with nitrogen dioxide. Reactions with other fluorine olefines were not investigated. Among other things, the authors found that these reactions

Card 1/3

depend mainly on the structure of the characteristic features of fluorine olefine (and lead to the formation of new and interesting substances). It was further shown that tetrafluorine-ethylene reacts explosively with nitrogen dioxide. It was possible to extend the method of nitration by means of nitrogen-dioxide also to other perfluorine olefines (see tables). In the case of none of the methods investigated were compounds able to form. It was shown that the destruction of β-nitroperfluorine-ethyl and γ-nitroperfluorpropylnitrites begins only at a temperature of more than 250°. The investigation of the nitration of chlorine fluorine olefines made it possible to determine a certain characteristic feature of this reaction (see formulae on page 1446.) The investigation of the nitration reactions of fluorine olefines and not substituted olefines with nitrogen-dioxide made it apparent that there is a similarity of the chemical character of these reactions (see table 2). The results of this investigation further showed that the stability of intermediate radicals as well as the polarity of fluorine olefines and that of the radical-like particle NO_2 are an important factor

Nitration of Fluorine Olefines by Nitrogen Dioxyde. 62-12-3/20
Lecture Delivered at the Meeting of the Department
of Chemical Sciences AN USSR on October 30, 1957

of orientation of the reacting components. Conceptions concerning the polarity of radicals, which were first published by Uotera (Waters?) and were further developed by Karash, Veys, Dolgopolov and others, deserve attention. There are 2 tables and 18 references, 10 of which are Slavic.

SUBMITTED: October 9, 1957

AVAILABLE: Library of Congress

Card 3/3 1. Chemical engineering-Conference 2. Hydrocarbon-Reactions
3. Fluorine-Organic compounds 4. Fluorine olefines

KHUNYANTS, I.L., akademik.

Over-all study of phenomena leads to the discovery of new laws. Tekh. mol. 25 no.5:34 My '57. (MIRA 10:6)
(Science)

AUTHOR KNUNYANTS, I.L., Member of the Academy, VYAZANKIN, N.S. PA - 2914

TITLE Reduction Dimerisation of Derivates of α,β-Unsaturated Acids. (Vosstanovitelnaya dimerisatsiya proisvodnykh α,β-nenasyshchennykh kislot -Russian)

PERIODICAL Doklady Akademii Nauk SSSR, 1957, Vol 113, Nr 1, pp 112-115, (U.S.S.R.)
Received 6/1957 Reviewed 7/1957

ABSTRACT As already dated, dinitryle of adipine acid forms the main product of the electrochemical reduction of acrylonitryle as it was already mentioned. This work was carried out in order to investigate the dependence of hydrodimerisation phenomena on the structure of the compounds to be reduced and on the nature of the amalgams. The investigation showed that one of the factors which influence the formation of hydrodimerigates is the character of the conjugated system of the substance to be reduced. This is by no means unexpected if it is assumed that the formation of the hydrodimerigate is preceded by molecule reduction withits subsequent dimerization. It is known that the non-conjugated ethylene-bindings to amalgam are not reduced. It was found (in the case of stirol and poyvinacetate) that the conjugations of the ethylene binding with the bemol kernl or with one unseparated electron-couple of the oxygen atom are not sufficient even for the reduction of a double-binding to potassium or lithium amalgam. It is rather difficult to reduce amides and diethyl amides of the same acid, they give no hydrodimerisates. Diethylamide and diphenylamide of cinnamon acid produce, besides the normal products of the reduction, also hydrodi-

Card 1/2

KNUNYANTS, I. L.

20-2-24/60

AUTHORS: Dyatkin, B. L., German, L. S., Knunyants, I. L., Member of the Academy

TITLE: Anionotropic Rearrangement of Substituted Perfluoropropenes (Anionotropnaya peregruppirovka zameshchennykh perftorpropenov)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 114, Nr 2, pp.320-322 (USSR)

ABSTRACT: As was shown by the authors of the paper under review in an earlier scientific publication, the reactions of affiliation and of vinylic substitution are in competition with each other if we have the case of an interaction of perfluoropropylene and perfluorisobutylene, on the one hand, with alcohols and amines, on the other hand. No allylic substitution takes place. This demonstrates that in the molecules of these fluorolefines the effects of conjugation of the double bond with the C-F-bond in the CF_3-group are weak. From this point of view, the reactions of the chlorofluoropropenes and chlorofluorobutenes command great interest, particularly the reac-

Card 1/3

Anionotropic Rearrangement of Substituted Perfluoropropenes

tions of perfluorallylchloride $CF_2=CF-CF_2Cl$. There also exists information according to which influence of nucleophile reagents on perfluorallylchloride leads to a substitution of chlorine by a corresponding anion. It has to be assumed that this is the result of the conjugation of the bond C-Cl with the double bond. The authors of the present paper investigated the reactions of perfluorallylchloride with sodium methylate and diethylamine. The interaction with the sodium methylate leads to the perfluorallylmethylether. This reaction represents a new solution for arriving at the derivatives of the perfluoracrylic acid. The ether is polymerized even at a lower temperature. The reaction of perfluorallylchloride with diethylamine has a light course. The perfluorallyldiethylamine produced as result of this reaction rearranges itself, still during the reaction, into perfluorpropenyldiethylamine. Hydrolysis of the latter leads to diethylamide of the α-hydroperfluorpropionic acid. Bromination of the perfluorpropenyldiethylamine with a subsequent hydrolysis results in diethylamide of the α-bromoperfluorpropionic acid. The above isomerization represents an allylic rearrangement and probably is caused by the tendency towards formation of a stabler system, and this owing to the conjugation of a double bond

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Anionotropic Rearrangement of Substituted Perfluoropropenes

with an unseparated electron pair of the substituent in the allylic position. The velocity of the rearrangement depends of the degree of mobility of the electron pair. Different compounds are arranged in a series in accordance with the criterion of stability. The experimental part of the paper under review contains the production methods together with the constants and yields of the substances investigated. There are 3 references, 1 of which is Soviet..

SUBMITTED: January 18, 1957

AVAILABLE: Library of Congress

Card 3/3

KNUNYANTS, I.L.

5(3) PHASE I BOOK EXPLOITATION SOV/1589

Akademiya nauk SSSR.

Khimiya bol'shikh molekul; sbornik statey (Chemistry of Large Molecules; Collection of Articles) Moscow, Izd-vo AN SSSR, 1958. 299 p. (Series: Akademiya nauk SSSR. Nauchno-populyarnaya seriya) 30,000 copies printed.

Compiler: O.V. Sklovskiy; Resp. Ed.: A.V. Topchiyev, Academician; Ed. of Publishing House: V.A. Boyarskiy; Tech. Ed.: I.N. Guseva.

PURPOSE: This book is intended for a wide circle of readers including those who have had no training in chemistry. It can also serve as a manual for propagandists, teachers, and journalists.

Card 1/8

Chemistry of Large Molecules (Cont.) SOV/1589

COVERAGE: This collection of articles reflects the trend for the future development of the Soviet chemical industry as indicated by the May plenary session of the Central Committee of the Communist Party within the framework of the new Seven Year Plan. These articles were published in newspapers and journals. The authors, scientists and industry workers, developed the theme of accelerated development of the chemical industries, and sciences, with stress on the manufacture of synthetic fibers, plastics, and other materials. Some of the articles were abridged, revised, or enlarged. The articles were selected so as to give an adequate survey of the chemistry and technology of high-molecular-weight compounds and their use in industry, agriculture, and in the manufacture of consumers' goods. Mentioned are raw materials for the production of polymers. This book belongs to the popular-science series of the Academy of Sciences. Similar volumes are intended for future publication. No references are given.

TABLE OF CONTENTS:

PART I

CHEMISTRY AND THE PROGRESS OF SOCIALIST SCIENCES AND TECHNOLOGY

PART II

SYNTHETIC MATERIALS: PLASTICS, FIBERS, RUBBER AND THEIR APPLICATION

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Chemistry of Large Molecules SOV/1589

AVAILABLE: Library of Congress

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6-1-59

Card 8/8

RODIONOV, Vladimir Mikhaylovich, akademik [deceased]; SVORYKINA, V.K., sostavitel'; KISELEVA, V.V., sostavitel'; FEDOROVA, A.M., [translator]; KRUNYANTS, I.L., akademik, otv.red.; SHEMYAKIN, M.M., akademik, otv.red.; ZHVERZOV, Yu.B., red.izd.; POLENOVA, T.P., tekhn.red.

[Selected works] Izbrannye trudy. Moskva, Izd-vo Akad. nauk SSSR, 1958. 792 p. (MIRA 12:2)

(Chemistry, Organic)

KHUTYLEVTS, I.L.; PERVOVA, Ye.Ya.; LIN'KOVA, M.G.; KIL'DISHEVA, O.V.

β-Thiolactones, their polycondensation and polymerization. Khim. nauka i prom. 3 no.2:278-279 '58. (MIRA 11:6)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Lactones)

STERLIN, R.N.; YATSENKO, N.D.; KNUNYANTS, I.L.

Reaction of perfluorovinyl magnesium iodide with carbonyl compounds. (MIRA 11:10)
Khim. nauka i prom. 3 no.4:540-541 '58.
(Vinyl compounds) (Carbonyl compounds)

reacts with a symmetric fluoroolefins, only one of the isomers forms which contains the difluormethylene group in the β-position.
There is 1 table and 4 references, 1 of which is Soviet, 2 French and 1 Chinese.

SUBMITTED: September 15, 1958

Card 1/1

SOV/63-3-6-30/43

AUTHORS: Knunyants, I.L., Dyatkin, B.L., German, L.S.

TITLE: Reactions of Perfluoroacrylonitril (Reaktsii perftorakrilonitrila)

PERIODICAL: Khimicheskaya nauka i promyshlennost', 1958, Vol III, Nr 6, pp 628-629 (USSR)

ABSTRACT: It has been shown that pure perfluoroacrylonitril easily reacts with methanol and ethanol producing β-alkoxy-α-hydroperfluoropropionitrils. It reacts also with piperidine and anilin in an ether solution producing amine fluorohydrate. There is 1 table and 2 non-Soviet references.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elemental-Organic Compounds of the USSR Academy of Sciences)

SUBMITTED: July 10, 1958

Card 1/1

AUTHORS: Knunyants, I. L., Sterlin, R. N., Pinkina, L. N., Dyatkin, B. L. 62-58-3-6/30

TITLE: Reactions of Fluorolefins (Reaktsii ftorolefinov) Communication 7. Addition Compounds of Acid Chlorides to Vinylidene Fluoride and Trifluoroethylene (Soobshcheniye 7. Prisoyedineniye khlorangidridov kislot k ftoristomu vinilidenu i triftoretilenu)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Khimicheskikh Nauk, 1958, Nr 3, pp. 296 - 299 (USSR)

ABSTRACT: The addition of alkyl halides discovered by Kondakov was later developed by others. In the present paper the authors show that such fluorolefins as vinylidene fluoride and trifluorethylene (in the presence of nonaqueous $AlCl_3$) possess the capability of combining with carboxyl chlorides and thereby forming the corresponding fluoro-substituted ketones. Vinylidene fluoride very readily combines with the acid chlorides of butyric acid and propionic acid at a temperature of -5 to -10°C in the presence of equivalent quanta of AlCl in

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Reactions of Fluorolefins. Communication: 7. Addition Compounds of Acid Chlorides to Vinylidene Fluoride and Trifluoroethylene

62-58-3-6/30

pure chloroform, where alkyl-2-chloro-2,2-difluoroethyl-ketones with yields of 44,48 and 33 % form:

$$RCOCl + CH_2=CF_2 \xrightarrow[CHCl_3]{AlCl_3} RCCH_2CF_2Cl \quad (O)$$

R = CH_3; C_2H_5; n - C_3H_7

At the same time substances form which correspond to the products of the partial or complete substitution of fluorine in chlorine and the products of further condensation. The authors obtained: methyl-2-chloro-2,2-difluoroethylketone and methyl-2-chloro-1,2,2-trifluoroethylketone. There are 8 references, 2 of which are Soviet.

SUBMITTED: November 3, 1956

Card 2/2

KNUNYANTS, I L.

62-58-4-6/32

AUTHORS: Knunyants, I. L., Sterlin, R. N., Bogachev, V. Ye.

TITLE: Reaction of Fluorolefines (Reaktsiy ftorolefinov) Communication 2. The Synthesis of 2-Iodoperfluorpropylene and Some of its Properties (Soobshcheniye 2. Polucheniye i nekotoryye svoystva 2-yodperftorpropilena)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Otdeleniye Khimicheskikh Nauk, 1958, Nr 4, pp. 425-427 (USSR)

ABSTRACT: The most simple way of producing the second member of the perfluorovinyl-iodide series would be the dehydrohalogenation of 1-chloro-2-iodo-2-hydroperfluoropropane. This can be reached by interaction of 2-hydroperfluoro propylene with iodine chloride-. From papers dealing with the compounds of alcohols with fluorolefines the conclusion can be drawn that with the increase of the polarity of the olefines the alcohols more easily combine with these fluorolefines. There are, however, no concrete data on the number of references. The authors describe in this paper

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62-58-4-6/32

Reaction of Fluorolefines. Communication 2. The Synthesis of 2-Iodo-perfluoropropylene and Some of its Properties

the synthesization of perfluoroisopropenyl iodide by combination of ethyl alcohol with perfluoroisopropenyl iodide. The earlier not described 1-methoxy-2-iodo-2-hydroperfluoropropane was produced. By saponification of this ester methyl esters of the α-iodo-α-hydroperfluoropropionic acid was produced. By dehalogenating this substance the methyl ester of 2-difluoroalkylic acid was produced. There are 7 references.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute for Elemental-organic Compounds, AS USSR)

SUBMITTED: November 20, 1956

AVAILABLE: Library of Congress

Card 2/2 1. Fluorolefines--Reaction 2. Iodoperfluoropropylene--Properties

AUTHORS: Knunyants, I. L., Dyatkin, B. L. 62-58-5-25/27

TITLE: Interaction of Some Fluorine Olefine With Phenols (Vzaimodeystviye nekotorykh ftorolefinov s fenolami)

PERIODICAL: Izvestiya Akademii Nauk SSSR,Otdeleniye Khimicheskikh Nauk 1958, Nr 5, pp. 648-650 (USSR)

ABSTRACT: The special character of the binary bond of perfluoroisobutylene and perfluoracrylonitryle consists among other of the fact that these compounds are easily subjected to an interaction with nucleophile reagents. Alcohols associate in this way without alkaline catalysts and without heating. In the case of perfluoroisobutylene, a substitution of the fluorine-vinyl atom into the alkoxy-group takes place. It was therefore of interest to investigate the behavior of these fluorolefines with respect to phenols. In the present report the authors describe the carried out non-catalytic compound of phenol and hydroquinone with fluoroisobutylene and perfluorakrylonitryle. Concluding, the description of the obtaining of phenylperfluorallylester by the interaction of perfluorallylchloride with potassium phenolate is given. There are 1 table and 5 references, 2 of which are Soviet.

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Interaction of Some Fluorine Olefins With Phenols 62-58-5-25/27

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute for [redacted]-organic Compounds AS USSR)

SUBMITTED: January 4, 1956

1. Ethylenes--Chemical reactions 2. Phenols--Chemical reactions

Card 2/2

AUTHORS: Knunyants, I. L., Mysov, Ye. I., Krasuskaya, M. P. SOV/62-58-7-24/26

TITLE: The Catalytic Hydration of the φ-Olefines (Kataliticheskoye gidrirovaniye φ-olefinov)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye khimicheskikh nauk, 1958, Nr 7, pp. 906 - 907 (USSR)

ABSTRACT: The investigation of the catalytic hydration of the φ-olefines besides its practical importance is also interesting because it is directly connected with important problems concerning the theory of heterogeneous catalysis. The rate of hydration depends on the state of the π-bond of the olefines. It increases with the decrease of the electron density of the bond, if the removal of the electrons from the catalyst lattice by the olefine molecule is the primary phenomenon in this process. The authors of the present paper showed that φ-ethylene, φ-propylene, φ-isobutylene, and other φ-olefines may be easily hydrated with molecular hydrogen on a palladium and nickel catalyst. The enclosed table gives the formulae of the initial olefine, the name of the catalyst, the hydration temperatures, the hydration

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The Catalytic Hydration of the α-Olefines SOV/62-58-7-24/26

products etc. Based on the observations made it may be assumed with great probability that the property of easy hydration of the olefine series increases from α-ethylene to α-isobutylene. There are 1 table and 7 non-Soviet references.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elemental-organic Compounds, AS USSR)

SUBMITTED: May 12, 1958

Card 2/2

KNUNYANTS, I.L.

AUTHOR: None Given

SOV/30-58-8-9/43

TITLE: At the Plenary Meetings of Departments (Na obshchikh sobraniyakh otdeleniy)

PERIODICAL: Vestnik Akademii nauk SSSR, 1958, Nr 8, pp. 57-68 (USSR)

ABSTRACT: These plenary meetings were held on June 16-17 with the purpose of nominating candidates for the AS USSR. Scientific lectures were also held.
Department of Physical and Mathematical Sciences: The Corresponding Member, AS, USSR, Ya. B. Zel'dovich spoke about the catalysis of nuclear reaction by mesons and the resulting phenomena. This hypothesis of a possibility of such a catalysis was first mentioned in 1954 by A. D. Sakharov and Ya. B. Zel'dovich.
Department of Chemical Sciences: V. A. Kargin, Member, Academy of Sciences, USSR, spoke about the tasks and aims of the work of the Council of Scientists (uchenyy sovet) on polymeric compounds; the council consists of 6 sections: for the synthesis of monomers; for the synthesis and kinetics of reactions; for the recovery of polymeric compounds; for materials for aircraft construction and other special polymeric materials; for

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chemical fibres; for the use and processing of polymeric materials. The council counts more than 100 persons. It comprises nearly all the leading scientists and experts of the respective branches of the chemical industry and of the universities. A. V. Topchiyev, Member, Academy of Sciences, USSR, reported on the working results of the commission for the elaboration of long-range plans for scientific research to be conducted in the institutes of the AS, USSR, in the field of the production and the use of high-molecular compounds. A lecture on cancerolytic peptides was held by I. L. Knunyants, Member, Academy of Sciences, USSR. This work which he carried out together with N. G. Golubeva and O. V. Kil'disheva is dedicated to the principal problems of cancer etiology. As suggested by the plenary meeting a special conference on that issue should be held under participation of a wide circle of physicians, biologists and chemists.

Department of Geological and Geographical Sciences: N. S. Shatskiy, Member, Academy of Sciences, USSR, spoke about movements of the earth crust and their origin, and the Corresponding Member, Academy of Sciences, USSR, V. V.

Belousov reported on some results and prospects of tectonic-physical investigations.
Department of Biological Sciences: The plenary meeting was held at the new station (equipped with an air-conditioning plant) of the Institute of Plant Physiology imeni K. A. Timiryazev. A. L. Kursanov, Member, Academy of Sciences, USSR, and I. I. Tumanov, Corresponding Member, Academy of Sciences, USSR, spoke about their investigations in plant physiology at this station, AS USSR, equipped with an air-conditioning plant. V. N. Sukachev, Member, Academy of Sciences, USSR, presented new data concerning the experimental investigation of plant interrelations. Sukachev is the Head of the Laboratoriya lesnoy geobotaniki Instituta lesa Akademii nauk SSSR (Laboratory for Forest-Geobotany at the Forestry Institute, AS USSR) at which this work was carried out. Ye. N. Mishustin, Member, Academy of Sciences, USSR, spoke about soil microorganisms.
Department of Engineering Sciences: G. I. Petrov, Corresponding Member, Academy of Sciences, USSR, talked on motions in real gas with velocities exceeding by far the velocity of sound. V. S. Pugachev, Doctor of Technical Sciences, spoke about

new methods of detecting and reproducing signals in the presence of interferences.

Department of History: V. N. Lazarev, Corresponding Member, Academy of Sciences, USSR, spoke about the mosaics and frescoes of the St. Sophia Church in Kiyev and on the painting "The Yaroslav Family".

Department of Literature and Philology: Ya. Ye. El'sberg, Doctor of Philological Sciences, and Professor S. I. Ozhegov, the Director of the Sektor sovremennogo literaturnogo yazyka i kul'tury rechi Instituta russkogo yazyka Akademii nauk SSSR (Branch for Modern Literary Language and Study of Languages of the Institute of Russian Language, AS USSR) spoke about the present reactionary theories and the revisionism in literature (El'sberg) and on some of the tendencies of these theories (Ozhegov). El'sberg's ideas were backed by V. V. Yermilov, Doctor of Philological Sciences. Ozhegov's lecture evoked a brisk debate among the following persons: S. I. Kotkov and V. O. Orlova, Doctors of Philology, V. M. Sidorov and B. V. Gornung, Candidates of Philology, B. A. Serebrennikov, Corresponding Member, Academy of Sciences, USSR,

At the Plenary Meetings of Departments SOV/30-58-8-9/43

V. V. Vinogradov, Member, Academy of Sciences, USSR.

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AUTHORS: Knunyants, I. L., Gambaryan, N. P. SOV/62-58-10-10/25

TITLE: Determining the Strength of the Bonds of Radicals With Sulfur in Unsymmetrical Sulfides by Means of a Destructive Bromination Method (Opredeleniye prochnosti svyazi radikalov s seroy v nesimmetrichnykh sul'fidakh metodom destruktivnogo bromirovaniya)

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1958, Nr 10, pp 1219-1227 (USSR)

ABSTRACT: The reaction of the carbonyl compounds with mercaptans in the presence of anhydrous hydrogen chloride (Refs 2-5) is widely used in the synthesis of α-chlorosulfides. The reaction with other compounds can not be used for the synthesis. Sulfides that have hydrogen in the β-position to the alkthio group form, however, in the chlorination a mixture of products of the further chlorination of vinyl ethers; the latter form intermediately, and are difficult to separate. The bromination of the sulfides has remained almost uninvestigated. Only in 1956 it was shown that in the treatment of dimethyl sulfide by bromine a very stable bromosulfonium salt is formed which in the course of long boiling in carbon tetrachloride decomposes

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Determining the Strength of the Bonds of Radicals With Sulfur in Unsymmetrical Sulfides by Means of a Destructive Bromination Method

SOV/62-58-10-10/25

into two directions (Ref 16). The authors of the present paper showed that the bromination of β-alkthio carboxylic acid derivatives leads to the cleavage of the C-S bond, with a bromine derivative and disulfide being formed. The reaction of the destructive bromination can be taken as characteristic feature of the strength of the bond of radicals with sulfur in unsymmetrical sulfides. The binding strength of the investigated radicals increases according to the order:
$C_6H_5CHCH_2CONHC_6H_5 \sim C_6H_5CHCH_2CONHC_6H_{11} < C_6H_5CH_2 \sim (CH_3)_3C -$
$- < -CH_2CH_2CON\ HC_6H_{11} \sim -C_2H_5$.
There are 4 tables and 20 references, 2 of which are Soviet.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elementary Organic Compounds, Academy of Sciences, USSR)

SUBMITTED: March 4, 1957

Card 2/2

5(3)

AUTHORS: Knunyants, I. L., Sterlin, R. N., Yatsenko, R. D., Pinkina, L. N.

SOV/62-58-11-11/26

TITLE: Reactions of Fluoro Olefins (Reaktsii ftorolefinov) Communication VIII. Reactions of Perfluoro Vinyl Magnesium Halides (Soobshcheniye 8. Reaktsii perftorvinilmagniygalogenidov)

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1958, Nr 11, pp 1345-1347 (USSR)

ABSTRACT: In the present paper the authors demonstrated that by the activation of magnesium with ethyl bromide and by carrying out the reaction in ester at -30 to -20° a practically quantitative consumption of magnesium can be achieved. By the decomposition of the reaction mass with diluted sulfuric acid 70 % of trifluoro ethylene could be separated. It was demonstrated that under the mentioned conditions perfluoro vinyl bromide and perfluoro vinyl chloride do not react with magnesium and that they are unchanged after the end of the reaction. An organomagnesium compound $CF_2=CFMgBr$ in a yield of up to 45 % could be formed from perfluoro vinyl bromide in tetrahydro furan. In this case it was not even necessary to

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Reactions of Fluoro Olefins.
Communication VIII. Reactions of Perfluoro Vinyl Magnesium Halides

SOV/62-58-11-11/26

activate magnesium with ethyl bromide. Apparently the assertion that an intensification of the basicity of the solvent favors the formation of R_yMgJ on the basis of its stabilization in the form of a complex of the

type, is justified. As the result of the processing of $CF_2{=}CFMgJ$ with solid carbon dioxide in ester solution at -40° and the subsequent decomposition of the reaction mass with 2N sulfuric acid solution perfluoro acrylic acid was obtained in a yield of 40 %. Henne (Ref 6) formerly obtained this acid by a complex and very slow method. The found method can be recommended without doubt for preparation. By processing the ester solution of the perfluoro acrylic

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Reactions of Fluoro Olefins.
Communication VIII. Reactions of Perfluoro Vinyl Magnesium Halides

SOV/62-58-11-11/26

acid with a calculated amount of diazomethane the methyl ester of perfluoro acrylic acid was obtained. There are 8 references, 1 of which is Soviet.

SUBMITTED: March 4, 1957

Card 3/3

5(3)

AUTHORS: Kil'disheva, O. V., Lin'kova, M. G., Savosina, V. M., Knunyants, I. L. SOV/62-58-11-12/26

TITLE: α,β-Disubstituted α-Acylamino Carboxylic Acids (α,β-Dizameshchennyye α-atsilaminokarbonovyye kisloty) Communication II. A New Method of Forming Oxazole-4-Carboxylic Acids (Soobshcheniye 2. Novyy sposob obrazovaniya oksazol-4-karbonovykh kislot)

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1958, Nr 11, pp 1348-1353 (USSR)

ABSTRACT: It has been communicated (Ref 1) that α,β-dihalogen-α-acylamino propionic acids easily react with water, alcohols, and amines and that they form α-substituted α-acylamino-β-halogen carboxylic acids (I) . Further investigations have demonstrated that α,β-dihalogen-α-acylamino propionic acids easily react with mercaptans and according to the halogen (chlorine or bromine) mono- or dialkthio acids are obtained. In this paper a new reaction for the formation of oxazole carboxylic acids from α-acylamino-β-halogen acrylic acids is demonstrated. α-substituted α-acylamino-β-halogen propionic acids

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α,β-Disubstituted α-Acylamino Carboxylic Acids. Communication II. A New Method of Forming Oxazole-4-Carboxylic Acids

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transform into oxazoline carboxylic acids under the action of alkali. They form according to the conditions either acyloxy-pyroracemic acids or oxazole carboxylic acids. The mechanism of formation of acyloxy pyroracemic acid from α-substituted α-acylamino-β-halogen carboxylic acids has been described already earlier (Ref 3). In this paper a mechanism of formation of oxazole carboxylic acids from α-acylamino-β-halogen acrylic acids was suggested. It was shown that the formation of oxazole carboxylic acid from α-substituted α-acylamino-β-halogen propionic acids takes place over a stage of formation of 2-aryl (or alkaryl)-4-substituted oxazoline-4-carboxylic acids without preceding transition into the corresponding α-acylamino-β-halogen acrylic acids. There are 7 references, 3 of which are Soviet.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elemental-organic Compounds of the Academy of Sciences, USSR)

Card 2/3

5(3)

AUTHORS: Kil'disheva, O. V., Shokina, V. V., Knunyants, I. L. SOV/62-58-12-9/22

TITLE: α,β-Disubstituted α-Acylamino Carboxylic Acids (α,β-Dizameshchennyye-α-atsilaminokarbonovyye kisloty) Communication 3: α,α-Diacylamino-β-Halogen Propionic Acids (Soobshcheniye 3. α,α-Diatsilamino-β-galoidopropionovyye kisloty)

PERIODICAL: Izvestiya Akademii nauk SSSR; Otdeleniye khimicheskikh nauk, 1958, Nr 12, pp 1461-1467 (USSR)

ABSTRACT: Some time ago it was proved (Ref 1) that α,β-dihalogen-α-acylamino propionic acids (I) easily react with water, alcohols, amines and mercaptans, forming the corresponding α-substituted α-acylamino-β-halogen carboxylic acids (II). Unsuccessful attempts were made to obtain the α,α-diacylamino-β-halogen propionic acids (III), where X = NHCOR, by a reaction of α,β-dihalogen-α-acylamino propionic acids with the corresponding amides. Further investigations showed, however, that α,α-diacylamino-β-halogen propionic acids can easily be obtained by the condensation of halogen pyroracemic acids with the corresponding nitriles in the presence of concentrated sulfuric acid in much the same way as in the production of α,α-diacyl-

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α,β-Disubstituted α-Acylamino Carboxylic Acids. Communication 3: α,α-Diacylamino-β-Halogen Propionic Acids

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amino carboxylic acids (Ref 2). According to this method the α,α-diacylamino-β-halogen propionic acids mentioned in table 1 were obtained. The dehydration of α,α-diacylamino-β-halogen propionic acids on heating led to the saturated oxazolones (VII) (Table 2). The oxazolones obtained were usually crystallized from acetic anhydride as stable, colorless, crystalline compounds. On the action of methyl alcohol on 2-methyl-4-acetylamino-4-chloro-methyl oxazolone-5 in the absence of moisture, the new α-amino-α-acetylamino-β-chloro propionic acid (VIII) with the melting point 135° was easily formed. There are 2 tables and 7 references, 3 of which are Soviet.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elementorganic Compounds, Academy of Sciences, USSR)

SUBMITTED: March 29, 1957

Card 2/2

AUTHOR: Knunyants, I. L., Member, Academy of Sciences, USSR SOV/29-58-10-10/28

TITLE: Scientists Greet the Komsomol !(Uchenyye privetstvuyut komsomol!)Don't Get Closed up in Your Special Field of Science (Ne zamykaytes' v predelakh svoyey spetsial'nosti)

PERIODICAL: Tekhnika molodezhi, 1958, Nr 10, pp 12 - 12 (USSR)

ABSTRACT: Among other things the auther quotes: Life means work and study. Indifference and passivity are the fate of the weak in mind. Indifference and passivity are no more the fate of the old they mean death. Learn, work and seek. Nothing is allowed to remain misunderstood and unsaid. From the cognition of the less important the great and new is born. This is equal in life and science. Honour knowledge and authority but do not bow to them. Think before you criticize. First of all you have to go to the bottom of a thing and then you are to defend it without the least fear and to express your opinion with courage! Be always honest ! There is no greater sin than that of a biased idea, or to say something one is not sure about only for reasons of prestige and influence. There

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is no field of science which is not interesting. In every field of science great inventions are possible. In the moment a person starts to think indepedently his interest for science is reused. The individual fields of science are autonomous and closely linked. Do not restrict yourselves to the limits of your field of science! Do not close your minds to life! Be aware that philosophy is all-comprising. Without philosophy it would not have been possible to discover the fundamental principles of life and development. Aquire the basic method of knowledge - materialistic dialectic - and you will always be successful in your work. There is 1 figure.

5(3)

AUTHORS: Knunyants, I. L., Gambaryan, N. P., Rokhlin, Ye. M. (Moscow)

SOV/74-27-12-1/4

TITLE: Carbenes (Karbeny) Compounds of Bivalent Carbon Occurring in Intermediary Form in Organic Reactions (Soyedineniya dvukhvalentnogo ugleroda, proneshutochno obrazuyushchiyesya v organicheskikh reaktsiyakh)

PERIODICAL: Uspekhi khimii, 1958, Vol 27, Nr 12, pp 1361 - 1436 (USSR)

ABSTRACT: In this survey the authors made an attempt to deal thoroughly with the data known from publications on the intermediary formation of carbenes. In future the intermediary formation of carbenes may be expected to be demonstrated in the case of reactions of organic substances as well. The survey is concluded with the discussion of the carbene structure. At the moment it is not yet possible to say anything definite about the electron state of the carbenes - whether in singlet or triplet state. In the former case they can really be regarded as bases conjugate with carbon ions, in the latter case as radicals. The data in the publications are extremely contradictory. It frequently occurs that the individual authors draw different conclusions from one and the same

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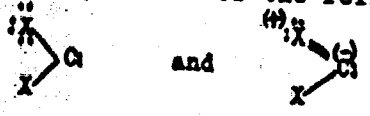
condition. Approximative quantum-mechanical computations lead, however, to the conclusion that the basic state of the most simple carbene - methylene - is a triplet state. The interest for carbenes was roused in connection with the work carried out with carbene dihalides. It was proved that in the case of an effect of bases on "haloforms" a separation of the proton takes place. The trihalogen methyl anion formed in this connection is decomposed into carbene dihalide and halogen anion. As a result of its electrophilic nature carbene dihalide enters a reaction with a number of nucleophilic reagents. In consequence of the reaction of carbene dihalides with olefins propane dihalides are formed. This new reaction has found a wide field of application and makes various cyclohexane derivatives accessible; among them also compounds with a condensed system containing a cyclopropane cycle. It is possible to explain the relative stability of carbenes by means of the superposition of the following structures:



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of oxycarbenes may be explained by an unseparated pair of electrons in the "carbene"-carbon atom with the carbonyl double binding. The carbene formation happens to be most unreliable in the synthesis of dihalogen

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Carbenes. Compounds of Bivalent Carbon Occurring as Intermediary Form in Organic Reactions SOV/74-27-12-1/4

derivatives. The possibility of an α-separation of hydrogen halide is proved by the investigation of hydrogen halide separation of deutero halides of the type RCD_2CH_2X and RCH_2CD_2X, even if the hydrogen atom is in a β-position. The α-separation of hydrogen halide is often accompanied by a process of regrouping which is in connection with the transformation of both hydrogen or deuterium and various groups connected with the β-hydrocarbon atom. Finally it may, however, be said that neither the geometric nor the electron structure of carbenes seems to be definitely investigated. There are 545 references, 72 of which are Soviet.

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20-119-1-22/52

AUTHORS: Golubeva, N. Ye., Kil'disheva, O. V., Knunyants, I. L., Member of Academy of Sciences

TITLE: Cancerolytic Peptides (Kantserolitícheskiye peptidy)

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol. 119, Nr 1, pp. 83 - 86 (USSR)

ABSTRACT: Cancerolytic, sarcolysin-containing dipeptides (table 1) were produced by condensation of the N-formyl-derivative of p-di-(β-ethyl chloride-)-amino-DL-phenylalanin (sarcolysin) with ethers of various amino acids. By the interaction of the sarcolysin-ethyl-ether with p-di(β-ethyl chloride)-amino-phenyl-acetic-acid the ethyl ether of p-di-(β-ethyl chloride)-aminophenacetyl-sarcolysin was obtained. Further p-di-(β-ethyl chloride)-aminophenacetyl- and γ-[p-di-(β- ethyl chloride)-amino]-phenylbutyryl-derivates of various amino acids were produced whose general formula is given (table 2). By the interaction of p-di-(β- ethyl chloride)-aminophenyl-acetic-acid and γ[p-di-(β-ethyl chloride)-amino/phenylbutyric-

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Cancerolytic Peptides

acid with anilin in the presence of 1,3-dicyclo-hexyl-carbodiimide the corresponding anilides were obtained; it is true that in the case of the interaction of these acides with 2-methyl-5-ethoxymethylene-6-amino-pyrimidin or with p-di-(β-ethyl chloride)-aminophenyl-acetic-acid with cyclohexalamine only N-acyl-derivatives of 1,3-dicyclohexyl-urea were isolated. Preliminary samples on the cancerolytic action of the sarcolysin-containing peptides were performed in the Institute for Experimental Pathology and Cancer Therapy of the Academy of Medical Sciences of the USSR (Institut eksperimental'noy patologii i terapii raka Akademii meditsinskikh nauk SSSR). It became evident that the sarcolysin-peptides possess marked properties close to those of sarcolysin which act against tumors and which at the same time are not toxic and have a high selectivity of the action upon some tumors. Finally the general method of production of sarcolysin-containing peptides and that of the individual peptides is given in a kind of experimental part.

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Cancerolytic Peptides

There are 3 tables, and 1 reference, 1 of which is Soviet.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute for Elementary Organic Compounds AS USSR)

SUBMITTED: December 10, 1957

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NESMEYANOV, Aleksandr Nikolayevich, akademik; REUTOV, O.A., otv.red.toma; TOPCHIYEV, A.V., akademik, red.; KNUNYANTS, I.L., akademik, red.; KABACHNIK, M.I., akademik, red.; [redacted], red.; KAN, N.I., red.; LOSKUTOVA, I.P., red.izd-va; POLYAKOVA, T.V., tekhn.red.

[Selected works in four volumes] Izbrannye trudy v chetyrekh tomakh. Moskva, Izd-vo Akad.nauk SSSR. Vol.1. 1959. 712 p. (MIRA 12:12)

1. Chleny-korrespondenty AN SSSR (for Reutov, Freydlina).
(Chemistry)

KNUNYANTS, I.L.

5(4) PHASE I BOOK EXPLOITATION SOV/2216

Soveshchaniye po elektrokhimii. 4th, Moscow, 1956.

Trudy...; [sbornik] (Transactions of the Fourth Conference on Electrochemistry; Collection of Articles) Moscow, Izd-vo AN SSSR, 1959. 868 p. Errata slip inserted. 2,500 copies printed.
Sponsoring Agency: Akademiya nauk SSSR. Otdeleniye khimicheskikh nauk.

Editorial Board: A.N. Frumkin (Resp. Ed.) Academician, O.A. Yesin, Professor; S.I. Zhdanov (Resp. Secretary), B.N. Kabanov, Professor, S.I. Zhdanov (Resp. Secretary); B.N. Kabanov, Professor; Ya. M. Kolotyrkin, Doctor of Chemical Sciences; V.V. Losev, P.D. Lukovtsev, Professor; Z.A. Solov'yeva; V.V. Stender, Professor; and G.M. Florianovich; Ed. of Publishing House: N.G. Yegorov; Tech. Ed.: T.A. Prusakova.

PURPOSE: This book is intended for chemical and electrical engineers, physicists, metallurgists and researchers interested in various aspects of electrochemistry.

COVERAGE: The book contains 127 of the 138 reports presented at the Fourth Conference on Electrochemistry sponsored by the Department of Chemical Sciences and the Institute of Physical Chemistry, Academy of Sciences, USSR. The collection pertains to different branches of electrochemical kinetics, double layer theories and galvanic processes in metal electrodeposition and industrial electrolysis. Abridged discussions are given at the end of each division. The majority of reports not included here have been published in periodical literature. No personalities are mentioned. References are given at the end of most of the articles.

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APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000723330001-2"

KNUNYANIS, I. L.

PHASE I BOOK EXPLOITATION SOV/3494

Reaktsii i metody issledovaniya organicheskikh soyedineniy, Kn. 8 (Reactions and Research Methods of Organic Compounds, Bk. 8) Moscow, Goskhimizdat, 1959. 446 p. Errata slip inserted. 4,200 copies printed.

Eds (Title page): V.M. Rodionov, Academician (Deceased), B.A. Kazanskiy, Academician, I.L. Knunyants, Academician, M.M. Shemyakin, Academician, and N.N. Mel'nikov, Professor; Ed. (Inside book): V.P. Yevdakov; Tech. Ed.: V.F. Zasul'skaya.

PURPOSE: This book is intended for laboratory personnel at industrial plants, for instructors and students at higher educational establishments, and particularly for scientists and researchers working at the numerous research institutes in the Soviet Union.

COVERAGE: This is the eighth volume in a series "Reactions and Research Methods of Organic Compounds." This series does not duplicate the one published in English under the title "Organic Reactions" and appearing in Russian translation; however, some material, of particular interest, is included in this publication. The present series is primarily devoted to reviewing the works of Soviet chemists. The eighth volume of this series deals with thiocyanation

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Reactions and Research (Cont.) SOV/3494

reactions of organic compounds and methods of studying them. It presents data on analytical methods using thiocyanates for the study of fats, mineral oils, and volatile oils. It discusses the use of thiocyanates for photographic emulsions, acceleration of rubber vulcanization, stabilization of lubricating oils, purification of tars, abatement of corrosion and purification of metals, production of mustard oil, and synthesis of sulfur-bearing compounds. It also discusses the use of thiocyanates as solvents for acrylonitrile polymers, as intermediate products in the synthesis of dyes, as antiseptics, bactericides, medicines, insecticides, and fungicides. The book contains 327 pages of tables listing 1449 initial organic compounds subjected to thiocyanation. The tables give formulas of the initial compounds, the names and structural formulas of the compounds, the reaction conditions, the reaction products and their yield percent as compared with the theoretical yield, as well as references to the literature on which the data are based. There are 797 references: 376 English, 228 German, 74 Soviet, 47 French, 17 Italian, 25 Japanese, 7 Polish, 7 Scandinavian, 3 Belgian, 8 Swiss, 1 Dutch, and 4 Hungarian.

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Reactions and Research (Cont.) SOV/3494

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AUTHORS: Sterlin, R. N., Sidorov, V. A., Knunyants, I. L. SOV/62-59-1-9/38

TITLE: Reactions of Fluoro Olefins (Reaktsii ftorolefinov) Communication IX. Action of Anhydrous Aluminum Trichloride on Fluoro Olefins (Soobshcheniye 9. Deystviye bezvodnogo trekhkhloristogo alyuminiya na ftorolefiny)

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 1, pp 62 - 64 (USSR)

ABSTRACT: In the present paper the authors investigated the effect exercised by anhydrous $AlCl_3$ on fluorinated olefins and especially on perfluoro propylene and 2-hydroperfluoro propylene. As a result of the interaction of $CF_3-CH=CF_2$ with $AlCl_3$ pentachloro propene $CCl_3-CH=CCl_2$ is synthesized as the only reaction product in a CH_3COCl solution under pressure (yield 65.5%). Similar results were obtained in the cold, at atmospheric pressure and in the substitution of chloroform for chloro acetyl. The complete exchange of fluorine atoms for chlorine in fluorinated olefins takes

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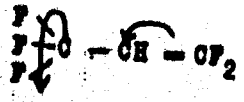
place under extremely soft conditions. This exchange apparently is a result of the σ,π conjugation in the 2-hydroperfluoro propylene molecule



which determines the mobility of fluorine atoms of the CF_3 group and the levity of the allyl regrouping. In the reaction of $AlCl_3$ with perfluoro propylene, which was carried out under equal conditions as in the case of 2-hydroperfluoro propylene, the only reaction product obtained was a compound with a C_3FCl_5 composition. Its structure may be expressed by one of the following formulae: $CFCl_2-CCl-CCl_2$, $CCl_3-CF-CCl_2$ (Ref 3). The compounds obtained were oxidized in order to determine their structure. Trichloro-acetic acid was synthesized as a result of the oxidation.

Reactions of Fluoro Olefins. Communication II. Action of Anhydrous Aluminum Trichloride on Fluoro Olefins SOV/62-59-1-9/38

This may be taken as a proof that 1,1,1,3,3-pentachloro-2-fluoropropylene-3 was obtained as a result of the exchange. There are 3 references, 1 of which is Soviet.

SUBMITTED: April 17, 1957

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5 (0)

AUTHORS: Knunyants, I. L., Topchiyev, A. V. SOV/62-59-8-2/42

TITLE: On the Occasion of A. N. Nesmeyanov's 60th Birthday

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, 1959, Nr 8, pp 1357-1361 (USSR)

ABSTRACT: The editors of the present journal and the Department of Chemical Sciences of the Academy of Sciences, USSR (Otdeleniye khimicheskikh nauk Akademii nauk SSSR) congratulate A. N. Nesmeyanov on his 60th birthday, which he celebrated on September 9, 1959. This great Soviet scientist is then celebrated for his scientific work. Nesmeyanov had graduated from Moskovskiy gosudarstvennyy universitet (Moscow State University) at the early age of 23 and had then worked as Assistant, Docent, and holder of the Chair of Organic Chemistry, and had finally become the Rector of this university, the oldest of the country. He was among the founders of the new university on the Lenin'skiye gory. The following scientific studies are mentioned: The method of synthesising organometallic compounds (1929) which now bears the name of Nesmeyanov reaction. In his research work he was mainly interested in the problems of the borderline between and transition of inorganic

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and organic compounds. He showed that the metal-carbon bond is unstable if an s- or f-valence level is not utilized. He found in the investigation of the orientation of substitution in a ferrocene nucleus that the conjugated bond is transferred in the molecule by the iron. He also succeeded in determining some rules governing tautomerism and twofold reaction possibility of organic substances while studying organometallic compounds. In his work concerning the stereochemistry of the cis- and trans isomer of arsenic, antimony, and other metal-chloro-β-vinyl derivatives he obtained a considerable understanding of the relationship between the configuration of a compound and its physiological effect. Thanks to this interest in the chemistry of elements with variable or uncommon valencies and owing to the investigation of their carbonyl compounds he succeeded in developing methods for the preparation of these compounds in their absolutely pure form. Among his research work in the field of telomerization of various bifunctional compounds the synthesis of the ω-amino-enanthic acids deserves special mention, by whose polymerization He arrived at a new kind of polyamide fibers, the "enant fibers". On the basis of these investigations a method for the industrial

production of such fibers was developed at the Institut elementoorganicheskikh soyedineniy AN SSSR (Institute of Elemental-organic Compounds of the Academy of Sciences, USSR) in cooperation with GIAP. Investigations of the so-called inner transformation of molecules (radical isomerization) let him discover new laws of nature. Moreover, Nesmeyanov devoted his attention to a number of problems of scientific organization and actively promoted scientific cooperation. There is 1 figure.

5.3600

77290
SOV/63-4-6-24/37

AUTHORS: Sterlin, R. N., Pinkina, L. N., Yatsenko, R. D., Knunyants, I. L.

TITLE: Brief Communications. Perfluorovinyl Derivatives of As and Sb

PERIODICAL: Khimicheskaya nauka i promyshelnnost', 1959, Vol 4, Nr 6, pp 800-801 (USSR)

ABSTRACT: Tertiary perfluorovinyl derivatives of As and Sb were obtained by the reaction of perfluorovinylmagnesium iodide with $AsCl_3$ and $SbCl_3$ in ether solution. Primary and secondary perfluorovinylarsine and corresponding stibine were not obtained. Perfluorovinyl dichloro-arsine was obtained by the reaction of 10-alkyl-5-10--dihydrophenarsazine and liquid HCl. The corresponding perfluorovinyl derivative of dihydrophenarsazine was obtained from perfluorovinylmagnesium iodide and adamsite. Perfluorovinyldichloroarsine (a new product) was obtained by decomposition of 10-perfluorovinyl-5,10-dihydrophenarsazine with liquid HCl. The obtained substances have the following properties: tri-(trifluorovinyl)-

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Brief Communications. Perfluorovinyl Derivatives of As and Sb

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-arsine, bp 58°/95 mm, 50°/70 mm, and 110-111°/746 mm, n_D^{18} 1.3938, d_4^{18} 1.8400, in 40% yield. Tri-(trifluorovinyl)-stibine, bp 75-75.5°/74 mm, n_D^{24} 1.4190, d_4^{24} 2.06, in 41% yield. 10-Trifluorovinyl-5,10-dihydrophenarsazine, mp 122° (alcohol) in 75% yield. Trifluorovinyl dichloroarsine, bp 115°, n_D^{20} 1.4820, d_4^{20} 1.9800, in 92.5% yield. There are 2 references, 1 Soviet, 1 French.

SUBMITTED: June 1, 1959

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5.3600

77292
SOV/63-4-6-26/37

AUTHORS: Knunyants, I. L., Rokhlin, E. M., Gambaryan, N. P., Cheburkov, Yu. A., Ch'en Ch'ing-yün

TITLE: Brief Communications. Fluorinated Ketones. Bis-(trifluoromethyl)-glycolic Acid

PERIODICAL: Khimicheskaya nauka i promyshlennost', 1959, Vol 4, Nr 6, pp 802-804 (USSR)

ABSTRACT: Nitrile of bis-(trifluoromethyl)-glycolic acid (I) was synthesized by the reaction of hexachloroacetone with HCN in the presence of a catalytic amount of piperidine.

$$(CF_3)_2CO + HCN \xrightarrow{\text{piperidine}} (CF_3)_2C\begin{matrix}OH\\CN\end{matrix} \qquad (I)$$

(I) can be distilled at atmospheric pressure without decomposition but, in the presence of piperidine, (I) is decomposed to HCN and hexafluoroacetone. (I) is partially hydrolyzed in the presence of water at room temperature, forming hexafluoracetone hydrate and HCN.

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